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# Sedimentary Structure in Gray Kaolins of Georgia

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**Abstract:** One Tertiary and two Cretaceous gray kaolin sites in Georgia were examined using X-ray radiography of core sections to determine the processes of formation of the deposits. The Tertiary kaolin was oxidized in the upper 3 m of the deposit and reduced below that point. The two Cretaceous kaolins were reduced from the top of the deposit to an abrupt boundary with oxidized red kaolin below. Radiography of the first Cretaceous core revealed thin laminar bedding in the gray kaolin and in the underlying red kaolin. The laminae continue without interruption across the gray kaolin/red kaolin boundary. The laminae were not visible in the gray kaolin except in radiographs. Sedimentary bedding was not observed visually or radiographically at the Tertiary site nor in sections of the core from the second Cretaceous site where kaolinite was recrystallized to large vermiforms. The original sedimentary structure in the first Cretaceous kaolin was preserved possibly due to the inhibition of kaolinite recrystallization by a higher organic matter content. Recrystallization of kaolinite and iron compounds may have destroyed sedimentary structures in part or all of the other two kaolin cores. It is hypothesized that the first Cretaceous kaolin sampled was deposited as a kaolinite-iron oxide mixture in an environment free of subsequent physical and biological mixing. The same hypothesis may apply to the other two kaolins but recrystallization after deposition has destroyed sedimentary structures.

**Key Words:** Gray kaolin • Kaolinite • Sedimentary structure • X-ray radiography

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